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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/564,027

01/09/2006

Jim Carothers

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EXAMINER

FULLER, ROBERT EDWARD

ART UNIT

PAPER NUMBER

3676

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/564,027	<b>Applicant(s)</b> CAROTHERS ET AL.	
	<b>Examiner</b> ROBERT E. FULLER	<b>Art Unit</b> 3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-14 and 16-42 is/are pending in the application.
- 4a) Of the above claim(s) 4,7-13,17,19-38 and 42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,14,16,18 and 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 4, 7-13, 17, 19, 20-38, and 42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on April 17, 2008.

2. Examiner notes that applicant included claims 7-9, 17, 20-22, and 38 in his election (see page 9 of the Remarks dated April 17, 2008). These claims were indicated as corresponding to Species other than Species Ia in the restriction requirement dated March 18, 2008 (see pages 3 and 4). Therefore, examiner has withdrawn these claims.

### ***Claim Objections***

3. Claims 4 and 5 are objected to because of the following informalities: The word -substantially-- should be inserted before "spherical" to be consistent with claim 1. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 5, 14, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (US 4,507,019).

With regard to claim 1, Thompson discloses a pipe-bursting apparatus for use with a drill string, the apparatus comprising: a frame (192) connectable with the drill string (188), wherein the frame comprises a housing segment having a first end and a second end; wherein the first end of the housing segment has a cross-sectional area less than a cross-sectional area of the second end and wherein the first end is disposed toward the drill string relative to the second end (see Figure 9); and at least one substantially spherical pipe-bursting member (218) supported by the frame and operable in response to movement of the drill string.

With regard to claims 3 and 16, Thompson discloses a plurality of substantially spherical bursting members (see Figure 10).

With regard to claims 5 and 18, the bursting members are radially disposed about the frame, and in a perpendicular plane to the longitudinal axis.

With regard to claim 14, Thompson discloses a horizontal directional drilling system comprising: a drive machine (184); a drill string (118), having a first end and a second end; wherein the first end of the drill string is operatively connected to the drive machine; a pipe-bursting apparatus operatively connected to the second end of the drill string, the apparatus comprising: a frame (192) operatively connected to the drill string wherein the frame comprises a housing segment having a first end and a second end; wherein the first end of the housing segment has a cross-sectional area less than a cross-sectional area of the second end and wherein the first end is disposed toward the drill string relative to the second end (see Figure 10); and at least one substantially

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spherical pipe-bursting member (218) supported by the frame and operable in response to movement of the drill string.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson in view of Rasmussen et al. (US 1,010,954).

With regard to claim 39, Thompson discloses a method for bursting pipe using a horizontal directional drilling system including a rotary drive machine (184), a drill string (118) having a first end and a second end, wherein the first end is operatively connected to the rotary drive machine, a pipe-bursting apparatus operatively connected to the second end of the drill string, the pipe-bursting apparatus comprising a frame (192), the frame comprising a housing connected to the second end of the drill string,

and a pipe-bursting member supported by the frame, the method comprising: operating the spherical pipe-bursting member by moving the drill string and pipe-bursting member toward the rotary drive machine.

Thompson fails to disclose entirely spherical pipe-bursting members.

Rasmussen discloses a pipe-bursting apparatus using rotatable ball-bearings (19) as the bursting members.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified Thompson to have included completely spherical pipe-bursting members such as those shown by Rasmussen, since Rasmussen states that "friction between the casing and the swage is greatly reduced when the swage is forced into the casing, and the operation of forcing the swage into the casing is made simple and easy" as a result of providing spherical pipe-bursting members (see lines 46-52 of Rasmussen). Furthermore, Thompson and Rasmussen discloses equivalent pipe-bursting members, and substituting one type of bursting member for another would have provided predictable results. Therefore, such substitution would have only required routine skill in the art.

With regard to claims 40 and 41, Thompson discloses rotating and advancing the drill string.

### ***Conclusion***

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8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited references provide further examples of pipe-bursting devices.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT E. FULLER whose telephone number is (571)272-0419. The examiner can normally be reached on Monday thru Friday from 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer H. Gay can be reached on 571-272-7029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jennifer H Gay/  
Supervisory Patent Examiner, Art  
Unit 3676

07/17/2008  
REF